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Social Computing

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If you are reading this book, then you are either interested in or have heard about software referred to as *social*. Social computing applications are those built on the various supporting technologies and concepts that are designed to enhance a person's experience on the computer by including the interactions and experiences of multiple users. A number of different categories of social applications have been identified by the continuing Web 2.0 trend, including social media, social bookmarking, and social networks. Nowhere has this trend toward social applications been more apparent than on the Internet. Each of the different social application categories have been exemplified by numerous web sites that are very popular today in both the mainstream media and countless individuals' personal use. Some of the best-known public sites are Facebook, MySpace, YouTube, and LinkedIn.

Web sites are only one example of social computing applications. There are many types of social computing applications that can be built. When building a social computing application, it is important to think of the audience the application is being created for. The problems solved by an Internet site or public-facing corporate web site are going to be very different than the problems solved for employees of a company using internally available resources. This could mean that most people using a web site such as Facebook on their own time will be using it for personal use or relaxation. When a user is at work, he or she is usually trying to accomplish a work task that a social application can assist with. Because most people want to get their work done during the working hours so they can go home to enjoy their personal time, make sure to keep this in mind when creating new social applications. When getting requirements from business units, requests such as wanting a site like Facebook may cause application designers to mix application features designed for work and application features designed for leisure. This book will talk about the concepts and technologies that can be used with SharePoint to bring the benefits of social computing applications to enterprise users.

History of Social Computing

The principles and ideas of social computing have been around for a long time. In fact, they have taken on different names throughout the years. As early as the 1980s, things like discussion forums (known then as bulletin board systems) and email provided ways for people outside of

military and universities to interact with each other. Social computing has actually almost always started as a tool that people saw as only being useful for goofing off or having fun. Originally, email was thought of as a way for people to communicate with their friends and did not provide a critical business value.

During the rise of the personal computing era, people within companies started to get desktop computers, and companies began to see this as a valuable tool for increasing business communication with remote offices and customers. However, many companies originally didn't see the value of allowing their employees to be on the Internet, for example, chatting with friends or surfing personal web sites, such as those found on `www.geocities.com`, one of the first freely available web page hosting sites. Another problem during this time was the cost of sending all of this information through the Internet. The cost of providing Internet to all households and employees was still a large price to pay. Most social computing applications rely heavily on transferring larger than normal amounts of data. During the mid-1990s, many users still had 56K modems or less. (In most cases, it was much less.) This made it initially difficult to have large web sites that were very interactive with rich media or continuously manage instant messaging. AOL was one of the first to provide this service to the mass public, but it took much longer to finally adopt these standards within companies.

As the close of the 1990s came, Internet bandwidth and the number of computers were no longer a problem. As the number of connected machines increased, popular new tools like instant messaging and interactive web site portals started to show up. During the dot-com days, many companies started to push the limit of what could be done with web sites. There were many investors for technology firms who were hoping to get rich, and this helped move the web portal and space. New applications like wikis and blogs started to show up for people to use. Sites like Wikipedia and WordPress quickly became popular as more users began to share their thoughts, ideas, and experiences. The beginning of the new century was the start of a sea change that was to bring social computing to the forefront of many computer users' daily experiences. More and more people started to use the social computing tools that have grown into what we know today.

Social Computing Concepts

In order to build social computing applications, it is good to know what types of features define social applications. There are many types of social computing applications that have been implemented today, but each one can usually be assigned to a general category that has similar traits. These general categories can be viewed as the social computing concepts. Each category has a different focus in terms of the way the data is displayed and how users interact with that data.

It is important to keep in mind that hundreds of social computing applications have been created, and more are arriving almost daily. Just because there is an existing implementation of one of these concepts available on the Internet doesn't mean that a totally different implementation might not work better for the business. Part of the process of building the right social computing applications for an organization is determining the right need and building an application that best solves that need.

There are four major areas that the concepts can be broken into; however, these groupings are not hard and fast as many applications span across multiple social concepts. These four areas are:

- Social media: This is the use of bringing interactive media together with user profiles.
- Social bookmarking: This concept allows users to save content to review later and share with other users.

- Social networks: This concept focuses on building groups of users that are connected by a shared interest or goal.
- Social communication: This concept allows users to communicate ideas and information while maintaining a context about each message.

Social Media

Media has always been a popular form of communication, beginning with the invention of the radio and television to media streaming over the Internet onto a personal computer. Most of the common forms of media do not include direct interaction on the part of the users, yet social applications rely on users participating in the application. The concept of building applications that use social interaction and media is the blend of these two ideas, and it has been a very popular success.

The major features frequently seen in social media applications include:

- Streaming or downloadable video or audio files: These media files make up the heart of a social media application, and the continual presence of new media files is generally why users return to the application.
- Ability to rate and comment upon content: The ability to communicate one's impression of a media file is the soul of a social media site. Users rate the content to help other users find the best content. User comments generate an open conversation about the media content in question in a way that is impossible to replicate with a standard television or radio experience.
- Number of views: Tracking the number of unique views of a media file helps the social application rate the item's popularity and potentially elevate the most popular items to the most visible locations.
- User profile and link to profile page: Users of a social application take advantage of the user profile to identify themselves and their activities in the social application.
- Metadata about the media: Metadata about the media, such as the time a media file was uploaded to the site or the geographic location a photograph was taken, help provide users with additional context for relating to the media file.
- Subscribe for updates: By using a subscription technology such as email or RSS, the social application reminds the user to come back and continue to participate in the conversation and the social experience.

An excellent example of a social media application would be the popular web site YouTube, as shown in Figure 1-1 below.

Although the example shows YouTube, which supports video content almost exclusively, applications for audio such as Microsoft's Zune Social and image applications such as Flickr should also be included in the category of social media applications. These sites take media and allow users to interact with that media. The most common social user interactions are the popularity counters as well as the comments and ratings systems.

Social Bookmarking

With all of the information users deal with today, it can be difficult for a user to find the right information he or she is looking for. Social bookmarking applications allow users to work together to mark items as

useful and save it to a central location where other users can benefit from the discovery. These sites usually allow users to group bookmarks into categories and will frequently identify the most popular bookmarks for all users to see.

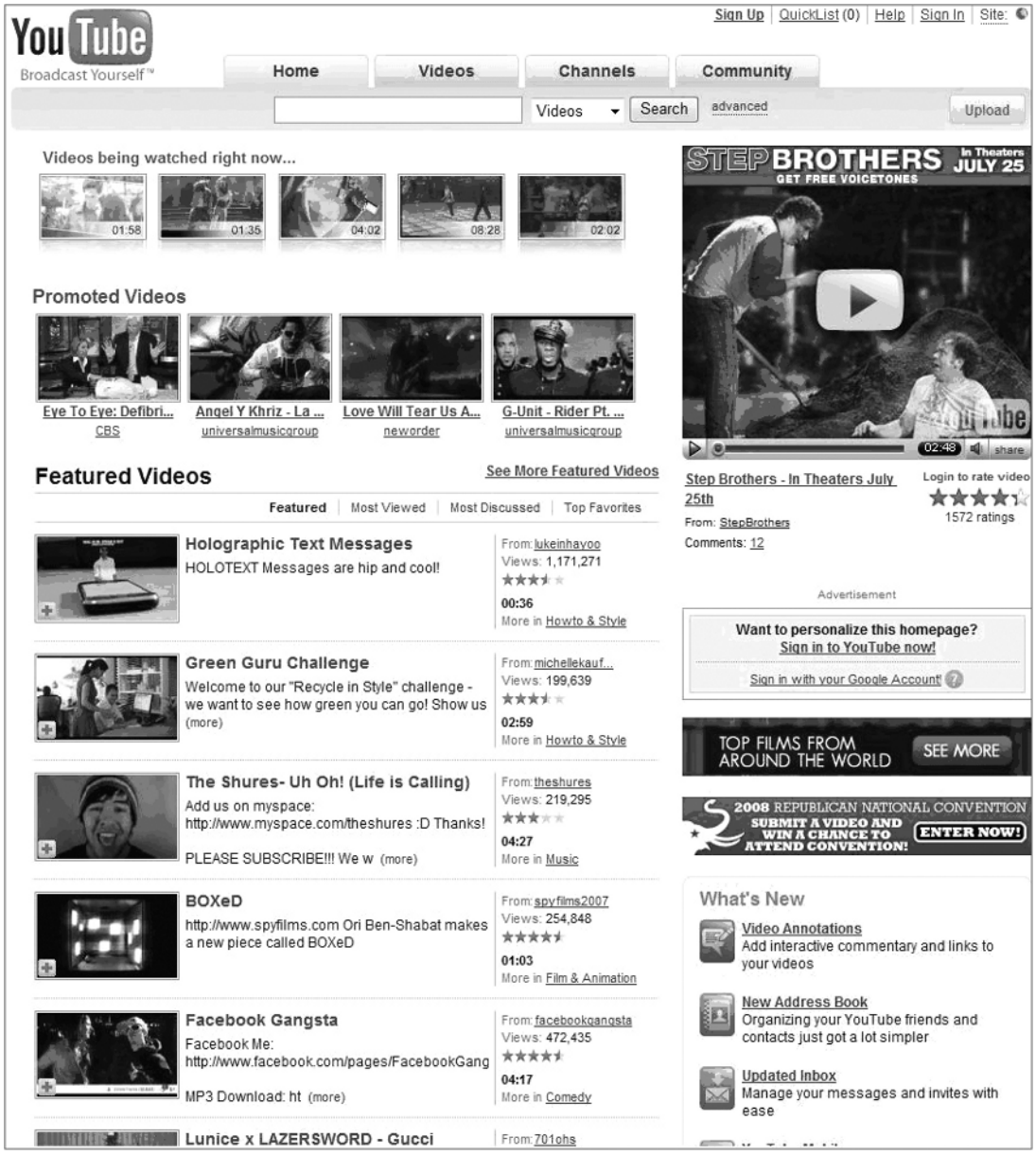


Figure 1-1

The social bookmarking concept is typified by including some common features such as:

- Availability of link information (title, link, and so forth): Much like a media file is the core of a social media site, the link of bookmark information is the core of a social bookmarking site
- Ability to categorize and comment on a link: Again, like a social media site allows comments and tagging for media files, a social bookmarking site frequently allows the bookmarking user to categorize and comment on the link information.
- Track the number of people saving the bookmark: In order to elevate the most requested bookmarks, the system must track each bookmark's relative popularity
- User profile and link to profile page: Users of a social application take advantage of the user profile to identify themselves and their activities in the social application.
- Subscribe for updates: By using a subscription technology such as email or RSS feeds, the social application reminds the user to come back and continue to participate in the conversation and the social experience.

One of the most common sites for viewing links of content that has been saved and marked with reference tags is on del.icio.us (`http://delicious.com`), as seen in Figure 1-2. This image illustrates how delicious tracks links, popularity counters, and categories or tags for each link.

Social Networks

Social networks are the most popular type of social applications. Social networks were thrust into the spotlight when sites such as Facebook and MySpace achieved their legendary levels of popularity. These applications are primarily used as content management systems, which help users keep up with friends, coworkers, and even potential sale leads or new jobs.

Social networking sites rely heavily on the user profile data. This might include information a user enters about himself or herself, such as interests, age, location, or work history. This data can allow the system to match people based on common information in their profiles. It is critical to have accurate and consistent data to make these matches in the profiles. In the MySpace profile of Tom below, Figure 1-3, it's possible to see that Tom's profile includes basic information about him and his interests, which have enabled him to become one of the most heavily ''friended'' people on earth with over 247 million MySpace friends!

To help drive traffic to the site and keep users interested, many social networking sites on the Internet have a developer kit and API for building mini-social applications or extending the sites themselves. This can allow other applications, such as independent web sites or even SharePoint, to integrate to the user profile stores of the social networking sites.

Some common application characteristics that typify the concept of a social networking application include features such as:

- User profile picture: How can you be sure if the John Smith asking to be your friend is the John Smith you know? Look at his profile picture and see it that's the right John Smith!
- Detailed user profile information: Social Networks rely on user profiles to help match one user to another. The ability to store rich user profile information in a social networking site is a must.

- List of friends and colleagues: It can't be considered a social network if every user is an island unto themselves. Social networks work to connect users with each other, and maintaining the list of relationships is an easy way to browse through these social connections.
- Activity or change log: The activity or change log keeps track of everything a user does inside of the social application and allows the user's friends to read and react to those changes. For example, if a Facebook user posts a new profile picture, friends of the Facebook user can make comments about the new photograph.
- Threaded or unthreaded discussion board: The discussion board allows users to talk back and forth to each other.
- Subscribe for updates: By using a subscription technology such as email or RSS feeds, the social application reminds the user to come back and continue to participate in the conversation and the social experience.

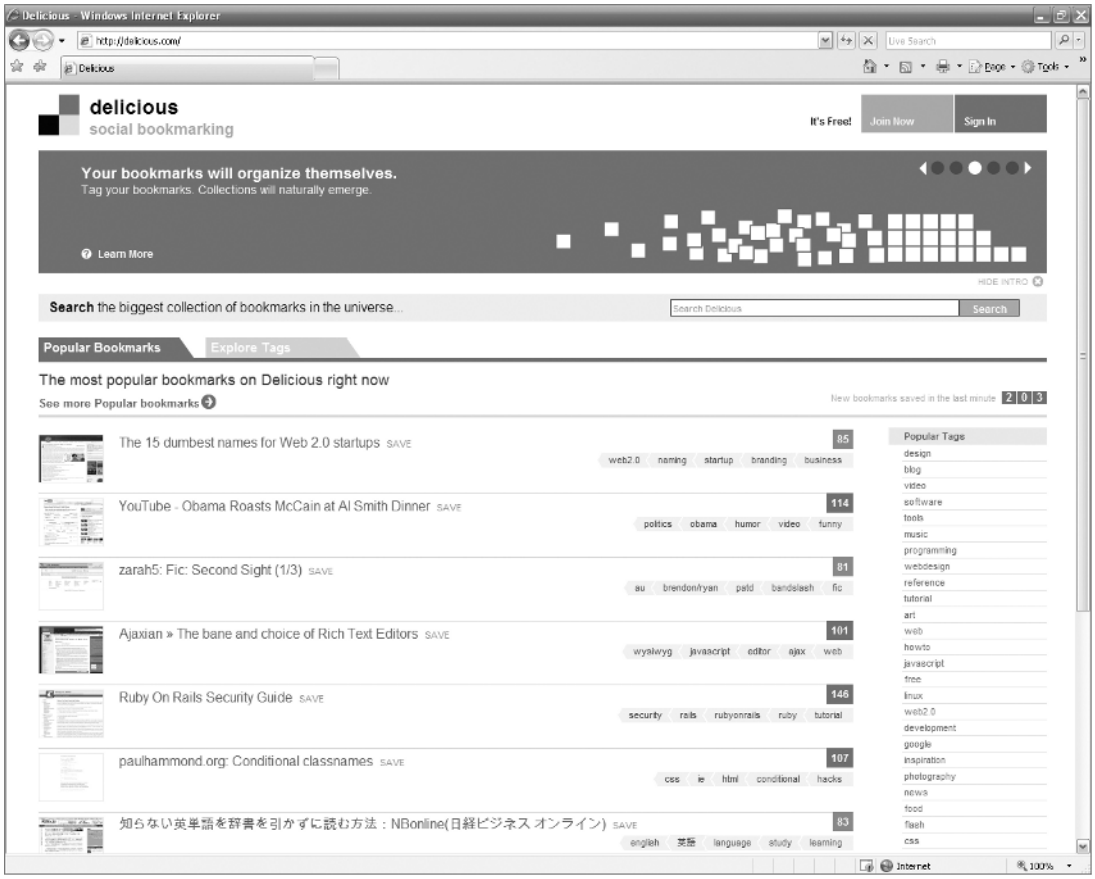
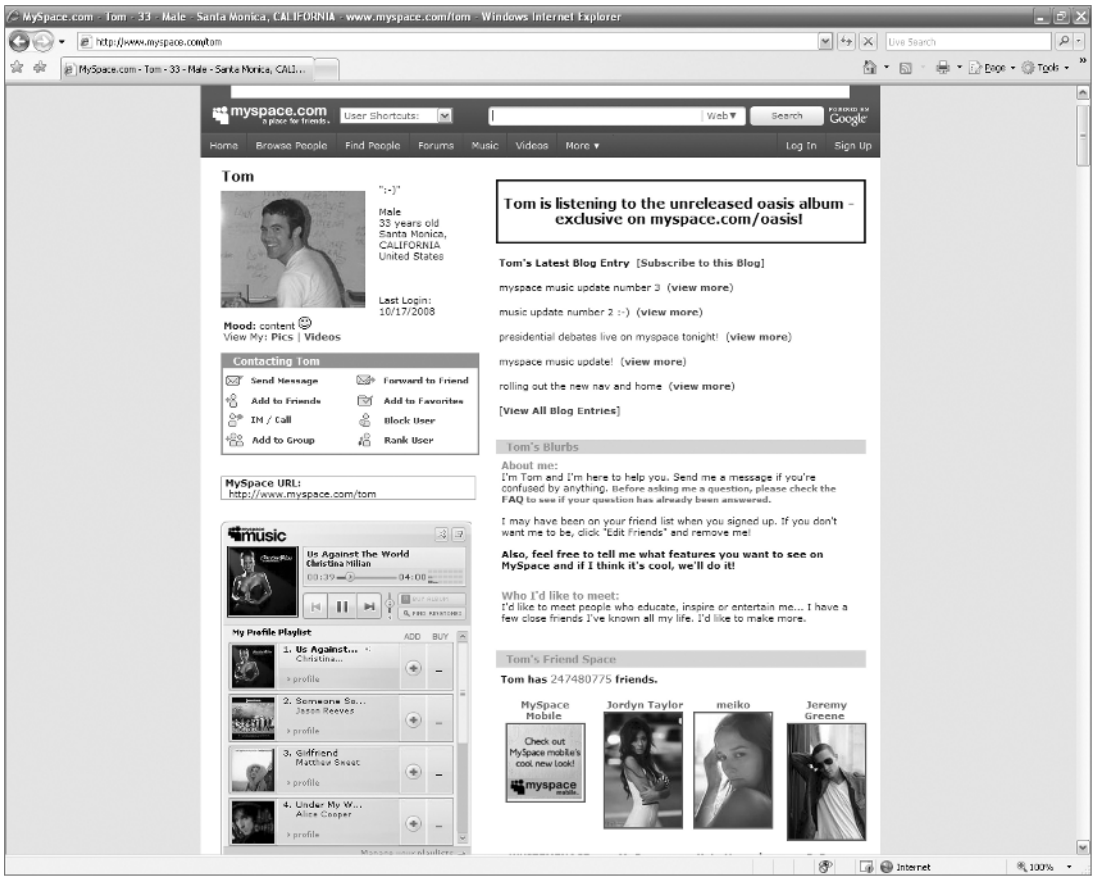


Figure 1-2


MySpace.com - Tom - 33 - Male - Santa Monica, CALIFORNIA - www.myspace.com/tom - Windows Internet Explorer
myspace.com
Home
Browse People
Find People
Forums
Music
Videos
More
Log In
Sign Up
Tom
Male
33 years old
Santa Monica, CALIFORNIA
United States
Last Login: 10/17/2008
Mood: content
View My: Pics | Videos
Tom is listening to the unreleased oasis album - exclusive on myspace.com/oasis!
Tom's Latest Blog Entry [Subscribe to this Blog]
myspace music update number 3 (view more)
music update number 2 :-) (view more)
presidential debates live on myspace tonight! (view more)
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[View All Blog Entries]
Contacting Tom
Send Message
Forward to Friend
Add to Friends
Add to Favorites
IM / Call
Block User
Add to Group
Rank User
MySpace URL:
http://www.myspace.com/tom
Tom's Blurbs
About me:
I'm Tom and I'm here to help you. Send me a message if you're confused by anything. Before asking me a question, please check the FAQ to see if your question has already been answered.
I may have been on your friend list when you signed up. If you don't want me to be, click "Edit Friends" and remove me!
Also, feel free to tell me what features you want to see on MySpace and if I think it's cool, we'll do it!
Who I'd like to meet:
I'd like to meet people who educate, inspire or entertain me... I have a few close friends I've known all my life. I'd like to make more.
Tom's Friend Space
Tom has 247480775 friends.
MySpace Mobile
Jordyn Taylor
meiko
Jeremy Greene
Check out MySpace mobile's cool new look!
Internet
100%

Figure 1-3

Social Communication

Inside of the general social computing concept, there is a category of applications designed specifically to enable and enhance one-to-one or one-to-many communication. This is different from social media because the communication itself is not based on a media file. Some examples of social communication applications include Twitter and FriendFeed. Social communication applications are distinct from instant messaging applications in that conversations are normally not private. These applications create a publicly searchable stream or feed of all incoming communications to an individual user that anyone can reply to or comment on. Figure 1-4 demonstrates this public communication feed on the Twitter web site.

Applications that implement the concept of social communication can usually be identified by the presence of the following features:

- Visible username
- Feed of personal communications

- List of friends and colleagues who subscribe to communications from the user and who the user subscribes to
- User profile and link to profile page
- Current or last status posting
- Ability to mark items as favorites

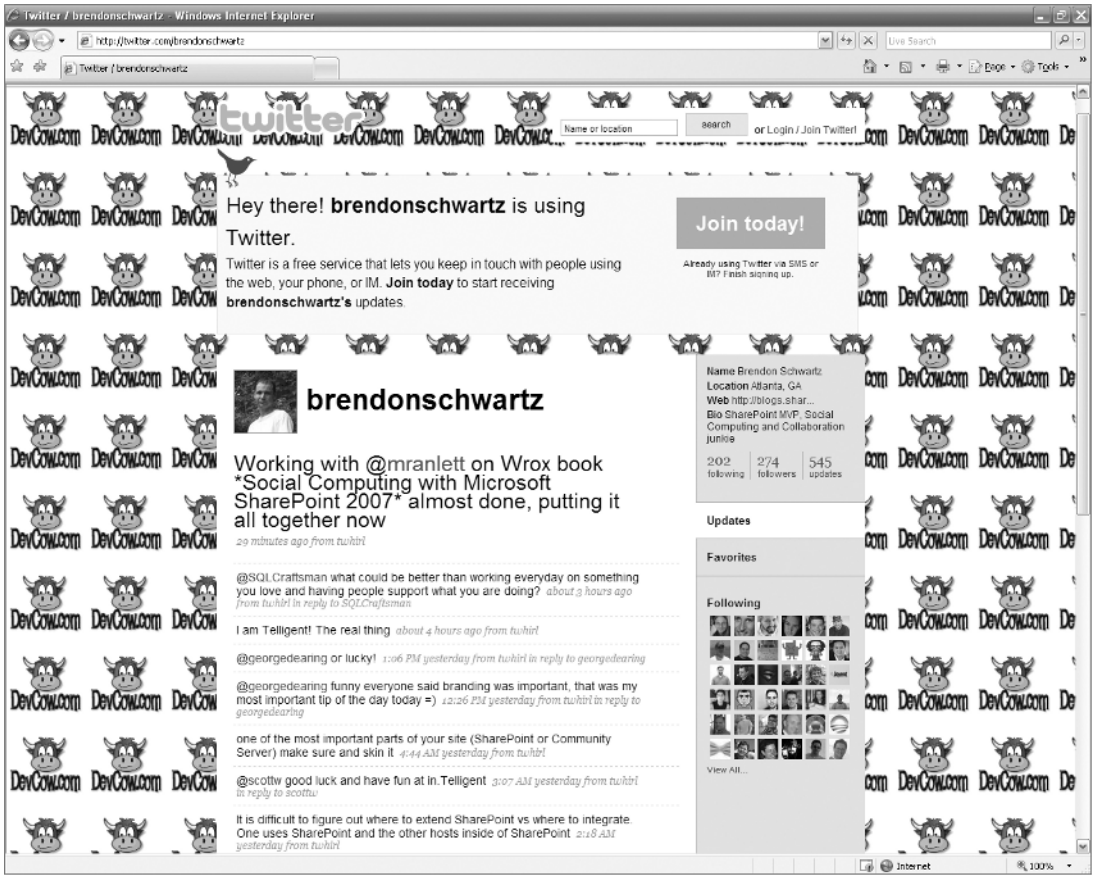

Twitter / brendonschwartz - Windows Internet Explorer
http://twitter.com/brendonschwartz
Twitter / brendonschwartz
twitter
Name or location
search
or Login / Join Twitter!
Hey there! brendonschwartz is using Twitter.
Twitter is a free service that lets you keep in touch with people using the web, your phone, or IM. Join today to start receiving brendonschwartz's updates.
Join today!
Already using Twitter via SMS or IM? Finish signing up.
brendonschwartz
Working with @mranlett on Wrox book *Social Computing with Microsoft SharePoint 2007* almost done, putting it all together now
29 minutes ago from twhirl
@SQLCraftsman what could be better than working everyday on something you love and having people support what you are doing? about 3 hours ago from twhirl in reply to SQLCraftsman
I am Telligent! The real thing about 4 hours ago from twhirl
@georgedearing or lucky! 1:06 PM yesterday from twhirl in reply to georgedearing
@georgedearing funny everyone said branding was important, that was my most important tip of the day today =) 12:26 PM yesterday from twhirl in reply to georgedearing
one of the most important parts of your site (SharePoint or Community Server) make sure and skin it 4:44 AM yesterday from twhirl
@scottw good luck and have fun at in.Telligent 3:07 AM yesterday from twhirl in reply to scottw
It is difficult to figure out where to extend SharePoint vs where to integrate. One uses SharePoint and the other hosts inside of SharePoint 2:18 AM yesterday from twhirl
Name Brendon Schwartz
Location Atlanta, GA
Web http://blogs.shar...
Bio SharePoint MVP, Social Computing and Collaboration junkie
202 following
274 followers
545 updates
Updates
Favorites
Following
View All...
Internet
100%

Figure 1-4

User Profiles

Each of the four major categories of social computing applications defined above contain a common element, the user profile. A central piece of any social application, the ability to store information about a user is critical to an application, which allows people to interact with each other.

SharePoint is no different from any other social application in that a user's profile is an important piece of the application. SharePoint already supports a central location to store this user profile information. Windows SharePoint Services (WSS), the free version of SharePoint, offers the User Information List.

Microsoft Office SharePoint Server (MOSS), both the Standard and Enterprise versions, offer the Shared Service Provider's (SSP) Profile Store. The premium versions of SharePoint offer application developers the opportunity to build more robust and scalable applications for large enterprises based on the Shared Services Profile. The User Information List is better suited to smaller team-sized applications as the list itself is a little more restricted than the SSP's profile store. For example, the User Information List does not allow the user to change the visibility of the individual profile data elements.

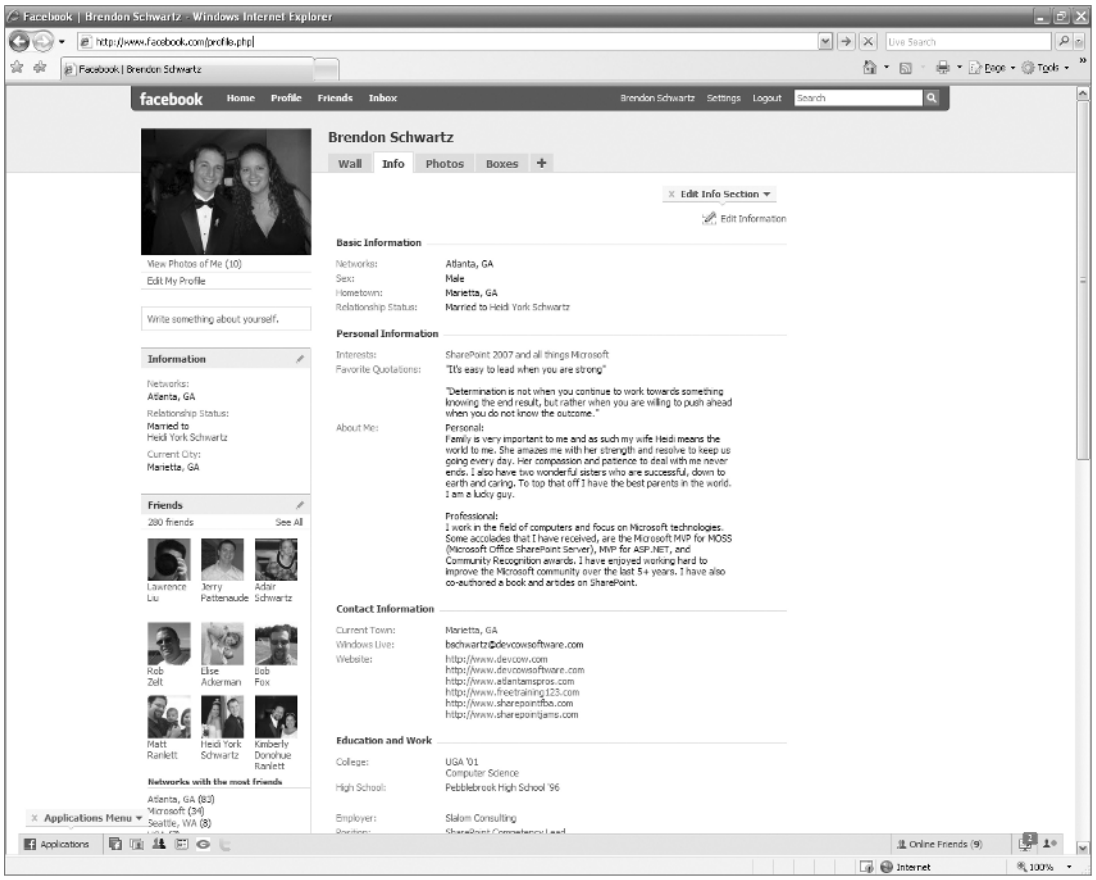
As the center of these social applications, the user profiles enable the application to provide robust and dynamic data to its users. These features sets include the application personalization system, people search, user profile page, and the social aspect of SharePoint's collaboration features. Personalization is the ability for a user to change aspects of what he or she sees or the locations of where the items will appear. The most common and recognizable area where SharePoint provides the flexibility of personalization to the user is the Web Part framework. The Web Part framework in SharePoint allows administrators to determine what pieces of the user interface the end user can arrange for a more productive environment for him or her to work in. In addition to being able to move the user interface elements, many of the Web Parts have properties that either a site administrator or even the end user can set. This personalization allows the user to adjust an application to optimize it for his or her personal work style.

One of the most powerful aspects of a social application is the ability to surface or display and present information that would normally be lost or only occur in a person-to-person interaction. Once the users have entered data into their user profiles, they are able to create connections to other people within the application. SharePoint allows the surfacing some of this data through the use of people search. Using the user profiles as the source location of searched data, SharePoint can find people who have similar projects, managers, or even groups they work in. Search can be very powerful, but, in order to allow search to have a way to display the results, the user profile information needs a way to surface that data. The most common way is with a user profile page that displays the user profile information in a structured manner.

The user profile page is a central location from which a user performs the actions on his or her profile. In many cases, the profile pages also let users review actions they have performed, such as adding content and commenting on or tagging content. These are usually contained in rollups that are specific to the user and sorted or filtered based on date. As can be seen in Figure 1-5, a common Facebook page will contain a profile picture as well as information specific to the user. In the business world, this would be equivalent to a dashboard into the current application.

Although Figure 1-5 was of a Facebook site, the same kind of information can be stored in SharePoint. In fact, SharePoint provides a set of pages called a *My Site* for managing user profiles. These pages allow users to manage their own personal data as well as view data from other users. With SharePoint, users can get to the My Site page from many links. Some of which are located directly in the collaboration features such as discussion boards.

Collaboration features that are augmented by the user profile store allow users to work together in a forum that builds on interaction. Some prime examples of familiar features include discussion boards, surveys, and announcements. Each one of these features uses the user profile differently, but each stores information about the user as he or she performs an action. For example, the discussion board in SharePoint can display the users profile picture that is stored in the user profile store next to each post by that user. By using the rich data available in a user's profile, social application users can quickly determine who has performed an action or view more information about the person, perhaps to ask a follow-up question.


Facebook | Brendon Schwartz - Windows Internet Explorer
http://www.facebook.com/profile.php
facebook
Home
Profile
Friends
Inbox
Brendon Schwartz
Settings
Logout
Search
Brendon Schwartz
Wall
Info
Photos
Boxes
Edit Info Section
Edit Information
Basic Information
Networks: Atlanta, GA
Sex: Male
Hometown: Marietta, GA
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Favorite Quotations: "It's easy to lead when you are strong"
"Determination is not when you continue to work towards something knowing the end result, but rather when you are willing to push ahead when you do not know the outcome."
About Me: Personal:
Family is very important to me and as such my wife Heidi means the world to me. She amazes me with her strength and resolve to keep us going every day. Her compassion and patience to deal with me never ends. I also have two wonderful sisters who are successful, down to earth and caring. To top that off I have the best parents in the world. I am a lucky guy.
Professional:
I work in the field of computers and focus on Microsoft technologies. Some accolades that I have received, are the Microsoft MVP for MOSS (Microsoft Office SharePoint Server), MVP for ASP.NET, and Community Recognition awards. I have enjoyed working hard to improve the Microsoft community over the last 5+ years. I have also co-authored a book and articles on SharePoint.
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http://www.atlantamspros.com
http://www.freetraining123.com
http://www.sharepointfba.com
http://www.sherepointjams.com
Education and Work
College: UGA '01
Computer Science
High School: Pebblebrook High School '96
Employer: Slalom Consulting
View Photos of Me (10)
Edit My Profile
Write something about yourself.
Information
Networks: Atlanta, GA
Relationship Status: Married to Heidi York Schwartz
Current City: Marietta, GA
Friends
280 friends
See All
Lawrence Liu
Jerry Pettenaude
Adair Schwartz
Rob Zelt
Elise Ackerman
Bob Fox
Matt Rankett
Heidi York Schwartz
Kimberly Donohue Rankett
Networks with the most friends
Atlanta, GA (80)
Microsoft (34)
Seattle, WA (8)
Applications Menu
Applications
Online Friends (9)
Internet
100%

Figure 1-5

The user profile store provides the storage of individual data as well as enabling rich applications to be built. This is why the user profiles are the center of most social applications. It provides the data needed to display and connect users without requiring the user to reenter personal data every time they perform an action.

Social Applications on the Internet Today

Dozens of social applications are available on the Internet today. In fact, there are so many social applications that a social application called FriendFeed was created to pull the various updates from all of these disparate social applications into a single content stream. Figure 1-6 is the list of 43 social applications that FriendFeed allows content to be pulled from, and this list of social applications is far from an exhaustive list of social web sites!

FriendFeed breaks down the four major categories of social applications a bit differently from the way this book does it, but it is possible to recognize that social media includes the video, photo, and music sites while the bookmarking and news lists both fall into the social bookmarking category. Conspicuously absent from the FriendFeed list of supported applications are some of the world's most popular social networking applications such as MySpace and Facebook.

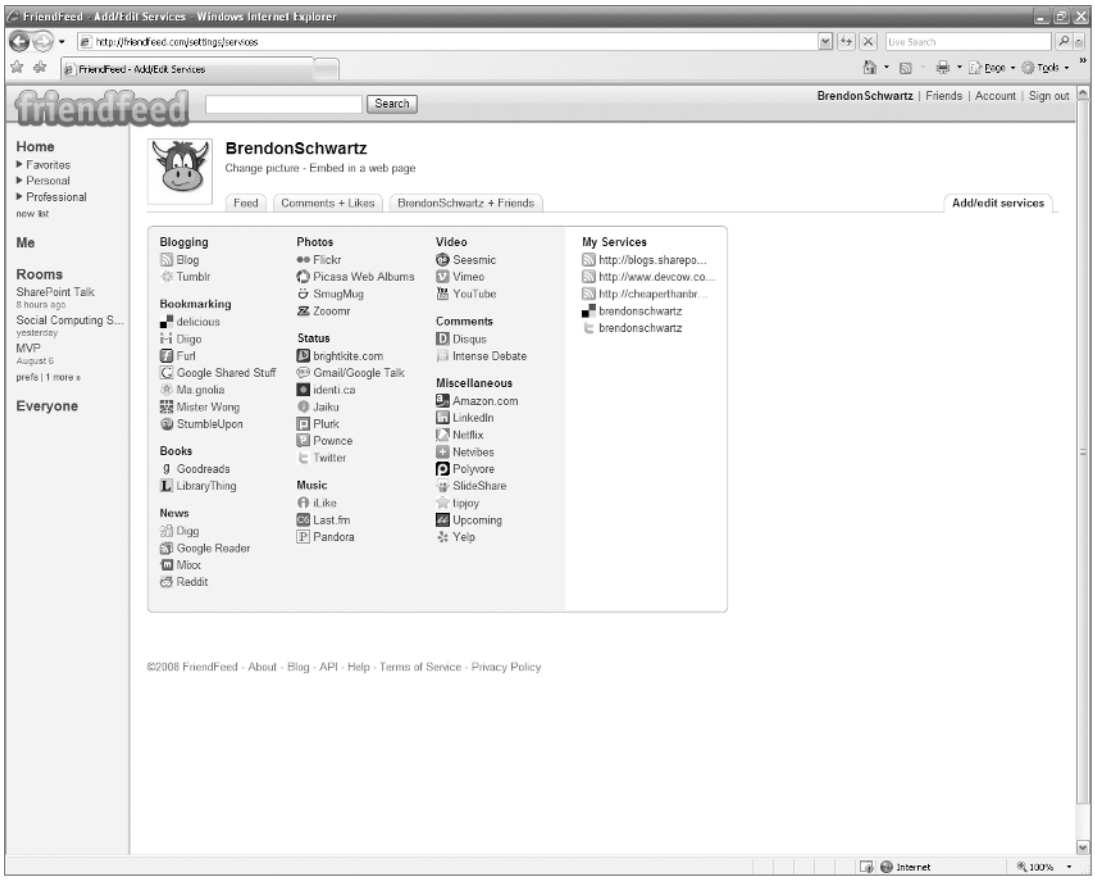


Figure 1-6

Social Computing for the Enterprise

Social computing has the capability to enhance and increase productivity in an organization. When extending an organization's capabilities around social computing, make sure there are business reasons that drive the addition of software. It is important to make sure the solution is actually enhancing the user's experience and not just creating more work for him or her to maintain.

Some of the common business problems that can be solved will be centered around communication and collaboration. These two areas are the primary focus of answering questions like ''How will a blog help me?'' and ''Why do my developers want a wiki?''

The two major areas that enterprise social computing provides key values include improved communication and building collaboration.

Improved Communication

Many companies struggle to get information out to all of their employees in meaningful and fast ways without creating too much of a burden of time on the individual employee. The improved communication

aspects of a social computing solution will increase the speed at which an organization can accomplish tasks. An example of this might be something as simple as using an RSS feed to pull down information about company news only when an employees is ready to read it. This improved communication usually works well with internal PR/PA groups and resonates well with upper management looking to streamline its corporate communications divisions.

Strategies for building a good communications plan using social computing techniques frequently plan to implement technologies such as tagging, rating, and improved search. This can hold true with people or documents from a social computing view as the application centers around people and the content they create. This is a fundamental difference from traditional enterprise content management (ECM) systems that are centered on documents. SharePoint's key is the ability to provide both of these capabilities and allow the customer to pick what is most important to him or her: documents, people, or both. SharePoint doesn't force its users to exclude one way of doing something just because it is using another. The most frequently cited example of this combined approach in SharePoint is focused on being able to search for an employee who is hard to find today or finding out who has edited a document. Additional business value can be discovered as users solve the problems they have today with actual Web 2.0 concepts, not just sample implementations.

Building Collaboration

Building collaboration is the other major aspect of enterprise social computing. Enhancing collaboration has been a central tenet of SharePoint ever since its inception as a product. For users of SharePoint 2003, this could be seen with the early value of having a Team Site in SharePoint, allowing a team to have a single point for work. Collaboration and communication are closely tied together and can increase value when used together. For instance, a SharePoint 2007 Team Site might have a set of announcements for the team. By using RSS feeds, SharePoint allows team members to read the announcement during their day without filling their email system and causing fragmentation in their work environment. Some of the key technologies that are used for building a more collaborative environment tend to include blogs, wikis, and discussion boards. The real value is the ability for multiple people to provide feedback to each other and work on the same set of information without waiting for a strict workflow process.

For example, take an internal instructional document for a software company's product that is designed to help the company's software engineers work more effectively. In general, there are many engineers working on a single document. Because this is a single document, there are a number of options that can be considered to enhance the collaboration experience. First and most obvious, the document can be stored in a SharePoint library. This library could require version control and enforce document checkout any time the document is going to be worked on. By checking out the document, the user is preventing other people from adding information directly to the document while it is in use, which could cause one person's changes to be overwritten. Unfortunately, this process of only allowing a single user at a time does slow down the overall progress of work. To share the document, it could be emailed to each person on a routing list for review, but this would require high amounts of duplication and disk space while minimizing the ability to collaborate quickly with other members. In this example case, a better collaboration tool such as a wiki could allow a secure, version-controlled, and collaborative environment for each of the users to work in. This would provide the most up-to-date living document and take some of the burden or extra work off the employees responsible for these documents. Learn more about wikis in the enterprise in chapter 4.

Enterprise Software Platform

There are many situations where another implementation of a social computing tool could be used, but the real value in the enterprise is having a powerful and extendable platform such as SharePoint that can leverage existing resources to create better tools for the organization. To build connected social computing applications, the enterprise needs a platform that enables quick development of these powerful applications. The platform used in this book focuses on Microsoft Office SharePoint Server 2007. SharePoint 2007 can be used as a platform for building social applications by enhancing the out-of-the-box functionality or creating custom add-ons. This rich platform contains the entry points needed to enhance applications where necessary. SharePoint includes direct access to data for developers through an easy-to-use object model as well as remote access with a multitude of web services.

Building a YouTube.com-style Media Site

Before looking at additional concepts and definitions, look at the concepts of building an application that provides social feedback to the users of the site and see how it would provide benefits in an organization.

Many organizations have training videos, videos from presidents or CEOs, or even employees providing direction on a single subject. These videos can be difficult for users to watch and especially hard to find, depending on where they are located. If they are located on a single user's machine, the user will need to email the videos or upload them to a file share that has proper rights for the users that will need to use them. SharePoint 2007 can help resolve these issues.

The first step is open a SharePoint site and follow these steps to create a video subsite. Chapter 11 will go into more depth on interactive media, but, for now, these will create a simple YouTube-style site.

1. Click View All Site Content, and then select Create.
2. Under the Web Pages section, select Sites and Workspaces.
3. Enter the title, description, and URL name.
4. In the Template Selection area, select the Collaboration tab. Then select Blank Site.
5. Keep the remaining options the same, and click Create.
6. In the new blank site, follow the same steps, but, this time, create a picture library named Video Links, and add the following fields:
   - Video URL: This will be used when the user clicks the URL to view the video.
7. Once again, click Create. This time, create a new document library named Videos.
8. Now upload the videos, add the video links, and place the video links on the default.aspx page of the site. The site might look very similar to Figure 1-7 below.

You will probably not want to upload large video files to the document libraries. In fact, you might want to have them on a streaming media server in a production environment.

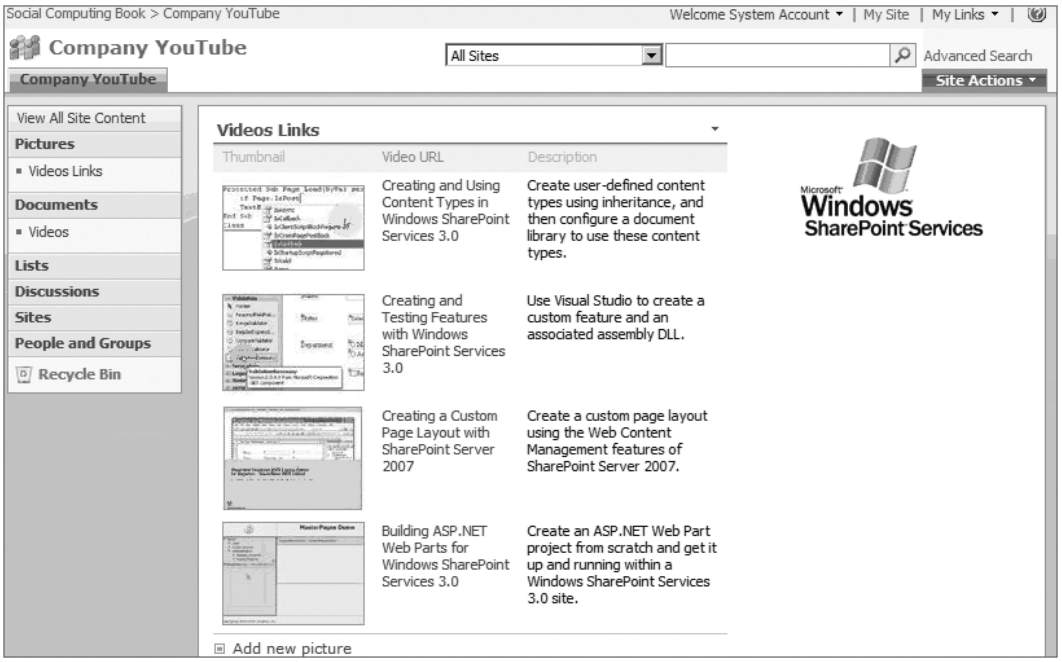

Social Computing Book > Company YouTube
Welcome System Account | My Site | My Links |
Company YouTube
All Sites
Advanced Search
Company YouTube
Site Actions
View All Site Content
Pictures
Videos Links
Documents
Videos
Lists
Discussions
Sites
People and Groups
Recycle Bin
Videos Links
Thumbnail
Video URL
Description
Creating and Using Content Types in Windows SharePoint Services 3.0
Create user-defined content types using inheritance, and then configure a document library to use these content types.
Creating and Testing Features with Windows SharePoint Services 3.0
Use Visual Studio to create a custom feature and an associated assembly DLL.
Creating a Custom Page Layout with SharePoint Server 2007
Create a custom page layout using the Web Content Management features of SharePoint Server 2007.
Building ASP.NET Web Parts for Windows SharePoint Services 3.0
Create an ASP.NET Web Part project from scratch and get it up and running within a Windows SharePoint Services 3.0 site.
Add new picture
Microsoft
Windows
SharePoint Services

Figure 1-7

A few items will need to be added over time to this, such as the user who uploaded it and information like ratings, comments, keywords, and many other social computing concepts. This small sample illustrates how quickly a site can be set up for these possibilities in a very short time.

Web 2.0

Recently, people have been grouping some common industry buzzwords together as a single term. Terms such as Web 2.0 are often referenced when talking about rich social and interactive web sites. This does not mean that Web 2.0 is the same as social computing applications. There is actually a reason why there are two different terms. The most common usage of the term Web 2.0 refers to slick-looking web sites that use new web technologies in order to provide a better user experience. These sites will use technologies such as AJAX, JavaScript, Flash, and Silverlight to enhance their look and interaction. In addition to the technologies the sites use, the sites frequently have a distinct visual look that includes rounded corners.

Web 2.0 will usually refer to the common implementations seen on the web. These implementations might include blogs, wikis, mashups, social networking site, and more. While most people think the site must have round borders and a shiny interface like Figure 1-8 to make a site a Web 2.0 site, but this is becoming less and less true. There are still certain design elements such as larger text and cute buttons, but none of them is required to have a Web 2.0 site.

Blogs

One of the most popular concepts in the Web 2.0 space is a blog, a space that allows the user to write content about a topic. The user could create a personal blog, a blog about technology, or, in the case of this book, a blog about business or a facet of the business such as a specific product line. Blogs provide a

way to communicate important information to the readers. Some common features found on a blog are RSS feeds, comments, and content tagging. Chapter 5 explores blogs in more detail.

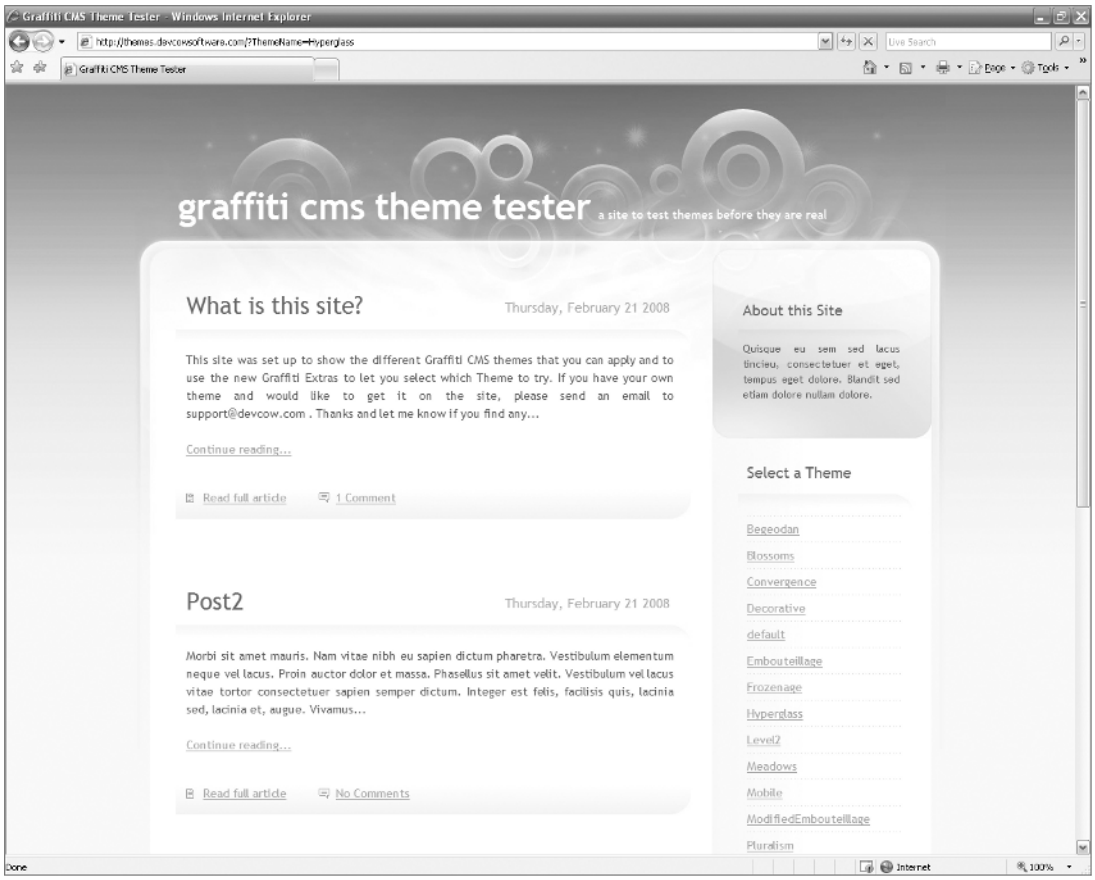

Graffiti CMS Theme Tester - Windows Internet Explorer
http://themes.devcowsoftware.com/?ThemeName=Hyperglass
Graffiti CMS Theme Tester
graffiti cms theme tester
a site to test themes before they are real
What is this site?
Thursday, February 21 2008
This site was set up to show the different Graffiti CMS themes that you can apply and to use the new Graffiti Extras to let you select which Theme to try. If you have your own theme and would like to get it on the site, please send an email to support@devcow.com . Thanks and let me know if you find any...
Continue reading...
Read full article
1 Comment
Post2
Thursday, February 21 2008
Morbi sit amet mauris. Nam vitae nibh eu sapien dictum pharetra. Vestibulum elementum neque vel lacus. Proin auctor dolor et massa. Phasellus sit amet velit. Vestibulum vel lacus vitae tortor consectetuer sapien semper dictum. Integer est felis, facilisis quis, lacinia sed, lacinia et, augue. Vivamus...
Continue reading...
Read full article
No Comments
About this Site
Quisque eu sem sed lacus tincieu, consectetuer et eget, tempus eget dolore. Blandit sed etiam dolore nullam dolore.
Select a Theme
Begeodan
Blossoms
Convergence
Decorative
default
Embouteillage
Frozenage
Hyperglass
Level2
Meadows
Mobile
ModifiedEmbouteillage
Pluralism
Done
Internet
100%

Figure 1-8

Wikis

As one of the most popular ways to create and maintain documentation or information with large groups of people, wikis have become a very popular Web 2.0 technology. There are now wikis such as Wikipedia that have grown to be used for maintaining and managing references for millions of pages. Wikis can also provide links to other parts of the documentation by using standard tokens. Tokens are similar to HTML markup with the fact that they modify the look of text they surround. Some common features of wikis are content, search, and version history. Chapter 4 will investigate the buzz surrounding wikis.

Mashups

Mashups are still growing in popularity, but they are a very powerful way to display data from different sources with many types of visualizations, such as a list of locations and a Virtual Earth map. Mashups are discussed in chapter 9.

Social Networking

The media and younger generations have made social networking applications visible as the forefront application. This application type is most well-known as a tool to connect with people and friends. Some business users still do not see the value in having connections and data available for searching, but there are many business values that can be achieved by having this type of application. Common traits found in social networking applications are friend lists, profile information, and stream of the user's friends' changes. An approach to social networking using SharePoint is explored in chapter 7.

Enterprise 2.0

Enterprise 2.0 is taking the Web 2.0 concepts and applications and applying them to internal company initiatives. This type of activity usually happens when an executive would like to foster more collaboration and communication within the organization. Be aware that the term Web 2.0 can mean many things to people, so designing applications or explaining the concepts of what Web 2.0 means in the enterprise requires explicit descriptions to prevent unintentionally underdelivering on promises.

As mentioned earlier, it is relatively simple to start by using some of the functionality that SharePoint provides with blogs, wikis, or RSS feeds. This can be a simple way to start adding new features to internal sites without adding much risk.

One big difference between the way public sites operate rather than corporate sites is the governance and polices that must be applied to sensitive data. When a user is contributing content on most Internet web sites, it is the user's responsibility to display only information that he or she wants people to see. In contrast, a company is held accountable for information that users can view on company sites, both internal and external. This data includes an employee's personal data as well as company documents.

Is Social Networking Behind in the Enterprise?

The short answer is ''Yes, it is,'' but there are reasons.

There is a bigger problem than just social networking, which is that many enterprises are behind on the Web 2.0 push. I'm not sure they are behind, but there just isn't always a good business reason to push to something that could just be a buzzword. There are two sides to social networking that should be looked at (maybe in another post):

- Social networking for intranets (internal)
- Social networking for business web sites (external) and applications provided by companies

I was talking to a friend of mine who works at a large bank, and I told him that the first bank to figure out how to bring Web 2.0 to enterprise banks would have a major advantage. Now, this may never happen because you have to find the business reason for doing this first.

Let's go back to enterprise social networking. Keep in mind that I will be looking at it from a SharePoint 2007 point of view. I think there are many large enterprises looking to bring in social networking right now. Most large enterprises are probably looking for a way to increase the collaboration they have now. If they weren't, they wouldn't be doing their job.

Some of the reasons preventing the private enterprise sector from adopting Social Networking might be based on a number of factors and challenges that are very different from — and may not affect — the public sector users, including the governance of the sites, information, and time. You don't want to have people on the computer all day trying to set up social networks and leaving messages on other people's walls. This would not be a good use of time.

Cost is one of the biggest factors I have seen for why a company might not bring in the tools. This includes hardware and software costs. The investment can be very high for enterprise-level tools, especially when the number of users starts to climb.

Integration seems to be a problem that has always been a challenge. Some recent challenges have been how to integrate the data from these products. Although it is much easier in SharePoint 2007, this is still a concern for many companies.

There are always features that companies want that they cannot get from a product, and that is where the community has to step up and create them. You need to have a good community of people continually improving the product. The good news for SharePoint users is that it does have great community involvement.

There are always a large number of companies looking to see who jumps first and was successful doing so. As soon as there are a number of large companies that are successful, I think there will be a wave of other companies following the trend.

Competition! Many companies don't know what the best solution is yet, and they are still evaluating what is out there. This can be a problem if your product is just like any other product available. For instance, some people use LinkedIn, and some use Facebook, but, when you have free access to both, you can use both. If you had to invest a lot of money into each one, you may be forced to evaluate the cost benefit of each and select only one of them to buy. What would you do if you had to pick just one?

I am sure there are many other factors, but I think many customers are getting ready to move, and they just need more time and/or resources, one of which being money. It is difficult to change without the availability of these.

Social networking may be behind right now, but I don't think it will be for very long. I have been talking with some leading enterprise companies, and they are looking at the tools. They are looking not only for productivity, but also as a requirement to attracting good employees. Some of the best and brightest workers have come to expect a certain level of tools at work that help them accomplish their tasks.

Used with permission from `http://blogs.sharepointguys.com/brendon/web-2-0/enterprise-web-2-0/is-social-networking-behind-in-the-enterprise/`.

The Business Value of Social Computing

One of the most questioned parts of social computing is the value it provides to the business. Some IT organizations as well as users still feel that the value returned with social computing applications is not well-defined. Part of the reason is that many inexperienced IT managers and corporate executives think that social computing is the same as social networking web sites like Facebook. Because of this, they feel there is no value in creating a social network in a company for employees to waste time. They couldn't be

any farther from the truth. Social computing applications not only provide a real business value; social applications can also provide a feeling of ownership within the company's employees.

Some of the more tangible common business values are as follows:

- Promote direct communication between subject matter experts and individuals with questions within companies
- Entice users to visit and revisit online material as they keep up with comments and other content changes
- Provide marketing of products or services
- Provide better communication for public relations or public affairs departments
- Build an understanding of partners or customers

Business value is something that does not always have to be measured in hard dollars. For this reason, many companies and consultants want to know what the clear return on investment (ROI) with these applications can be.

Enabling Technologies of Social Computing

Many technologies make the capabilities of social computing applications possible in today's environment. These technologies have evolved over time and will continue to change and grow as new capabilities become available in Internet browsers as well as operating systems.

JavaScript

One of the primary technologies used on the web during the dot-com days to make more interactive sites was JavaScript. JavaScript allowed developers to program code that would be downloaded as part of the page's content and run inside the Internet user's browser. This ability to run in the browser makes JavaScript a client-side technology as opposed to server-side code, which runs only on a central server such as a process-fetching data from a database. This client-side code is a critical part of many applications that want to provide rich interactive experiences for the user. There are countless applications, including numerous social computing applications, which take advantage of JavaScript. An easy-to-imagine example is JavaScript code that lets the user confirm friend associations or view pictures without having to wait long periods of time for the page to refresh on each click.

The two most common ways to add JavaScript to a web page is to either make a programmatic reference on the web page to an external file or actually place the JavaScript directly in the web page in question. The code below is a sample of some of the actual SharePoint JavaScript files that are referenced by SharePoint pages and loaded whenever a page is opened.

```
<script type="text/javascript" language="javascript" src="/
_layouts/1033/core.js?rev=S5dt4K8TJGVTYU9HrW6enw%3D%3D" defer></script>
<script type="text/javascript" language="javascript" src="/
_layouts/portal.js?rev=cRI8b5r5N%2BkLhIuWR03ICg%3D%3D"></script>
<script type="text/javascript" language="javascript" src="/
_layouts/1033/ie55up.js?rev=Ni7%2Fj2ZV%2FzCvd09XYSSWvA%3D%3D"></script>
```

```
<script type="text/javascript" language="javascript" src="/
_layouts/1033/search.js?rev=yqBjpvg%2Foi3KG5XVf%2FStmA%3D%3D" defer></script>
<script type="text/javascript" language="javascript" src="/
_layouts/1033/EditingMenu.js?rev=O4%2BTJbLGM9Af07theU%2BW6A%3D%3D"></script>
```

The second way is to add the JavaScript code directly to the page it needs to run on. Generally, when a developer does this, he or she will either create a function that can run later or make a call to a function or code that will run as it is parsed in-line. For example, the code below will create a variable, run some logic code with an `if` statement, and create a function or programmatic subroutine that can be called at a later time.

```
<script type="text/javascript">
//<![CDATA[
var theForm = document.forms['aspnetForm'];
if (!theForm) {
    theForm = document.aspnetForm;
}
function __doPostBack(eventTarget, eventArgument) {
    if (!theForm.onsubmit || (theForm.onsubmit() != false)) {
        theForm.__EVENTTARGET.value = eventTarget;
        theForm.__EVENTARGUMENT.value = eventArgument;
        theForm.submit();
    }
}
//]]>
</script>


<script src="/WebResource.axd?d=Ueyb-Jxh5PeDBqOXKfnVlQ2&t=633326287538634355"
type="text/javascript"></script>

<script> var MSOWebPartPageFormName = 'aspnetForm';</script>
```

All of the variables that are created outside of a function call are global and can be used in the functions on the page or linked scripts. The easiest way to view a page to see the JavaScript and linked files is to right-click on the page and select View Source. The HTML of the page as well as the JavaScript that is run will be displayed in the default viewer such as Notepad.

Although JavaScript is available on almost every Internet browser application today, it is not a requirement when building a social computing application. In fact, there are times when other technologies or even a full-page refresh might make an application more usable. When JavaScript makes changes to the page, it can be challenging to get back to exactly what the user was doing if he or she presses the Back or Refresh buttons.

AJAX

In order to make an interactive site driven with updates of data, a programming technique called AJAX was introduced in the mid-2000s. Although there had been different ways of dynamically interacting with content, AJAX provided a standard way for web developers to make dynamic requests to the server without having a full-page refresh. In common web programming, the Internet browser being used makes a call to the web server using the Hypertext Transfer Protocol (HTTP). The common model for HTTP is to make a call and return the HTTP page markup. If the display of the page needs to be modified,

based on the changes of the page, the entire page must be submitted to the server. Then it is re-rendered to the end user once more. Microsoft realized this would be a problem for rich clients like Outlook Web Access (OWA), so it created an ActiveX control called the XMLHttpRequest object. Eventually, other browsers added this capability to their browsers as dynamic sites, and data was becoming more popular as a way to render a web page. This technology has essentially replaced the original XMLHttpRequest technology that is now called AJAX.

AJAX has become popular with social computing applications, based on how dynamic the data is and how often the data changes. To help programmers manage the ever-changing data, AJAX allows the developer to either update data that might have been requested on a page, but doesn't require a full-page refresh or can be used to load a page while making a call to a data service that may take longer to load. This gives the illusion that the page renders quickly even if all of the data for that page was not ready prior to loading the page. An example of how these callbacks are made in SharePoint 2007 can be seen in the RSS feed or the usage reports that are generated, as seen in Figure 1-9.

Figure 1-9

This new technology really gives developers the power to build amazingly full interactive sites. Microsoft noticed that this technology was so helpful that it created Microsoft ASP.NET AJAX. Microsoft has even included Microsoft ASP.NET AJAX into the ASP.NET 3.5 as part of the .NET Framework installation. Because SharePoint is built on ASP.NET 2.0, Microsoft ASP.NET AJAX is not part of the default installation. It can still be downloaded and installed separately for ASP.NET 2.0 and SharePoint 2007. To help get developers started, community members like Daniel Larson created open source toolkits known as the SharePoint AJAX Toolkit. When building rich applications using the Microsoft ASP.NET AJAX Framework, it is important to make sure that it is installed on all of the SharePoint Web Front End (WFE) servers prior to deploying it to production. However, developers could simply use the built-in method calls to the XMLHttpRequest, which never went away despite the introduction of AJAX, and related objects using JavaScript to avoid the need to deploy or install any additional AJAX frameworks on servers.

Silverlight

JavaScript and AJAX provide powerful data-driven web pages, but people are increasingly looking for extremely rich and interactive sites. For years, Abode Flash has answered this need for rich interactivity. Flash is an animation-heavy programming environment that requires a unique set of skills to work with. To provide .NET developers with tools for performing this rich set of functionality, Microsoft introduced a technology called Silverlight, allowing developers to create powerful user interfaces using an XML-based language called XAML, JavaScript, AJAX, and .NET. Silverlight has been quickly growing and has become an adopted technology in that it is similar to Flash yet is accessible to .NET developers.

Figure 1-10 shows one of Microsoft examples for SharePoint and Silverlight.

Microsoft has now created a set of recommendations for using Silverlight with SharePoint called the Microsoft Silverlight Blueprint for SharePoint. These guidance packages called Software + Services Blueprints have a number of compelling scenarios that are worth investigating. The Software + Services Blueprints will have many scenarios like Outlook and SharePoint. Here is an

explanation directly from the Channel 9 site on what they are: `http://channel9.msdn.com/wiki/softwareplusservicesblueprints/`.

> *''Software-plus-Services Blueprints are a series of source code and guidance packages designed to provide an architectural bridge between vision and implementation by making it easier to build Software-plus-Services applications.''*

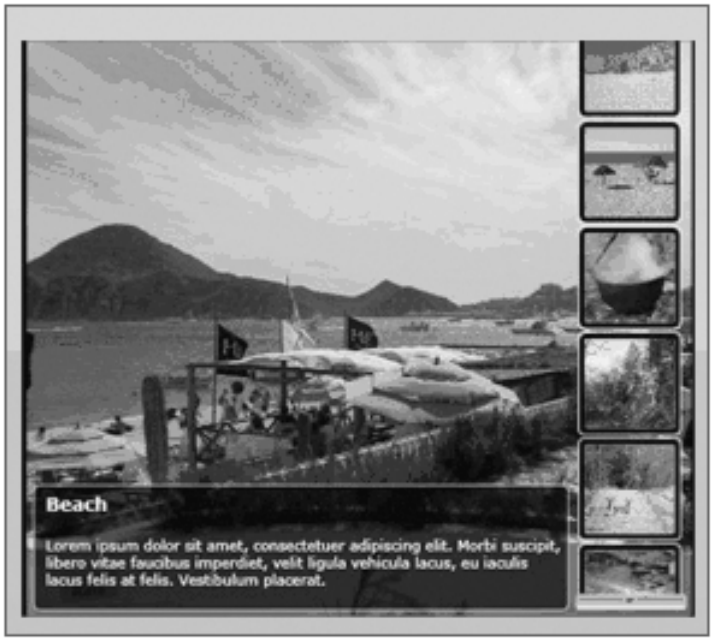

Beach
Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Morbi suscipit, libero vitae faucibus imperdiet, velit ligula vehicula lacus, eu iaculis lacus felis at felis. Vestibulum placerat.

Figure 1-10

As companies begin to incorporate more Silverlight application into their offerings, this set of samples and code is likely to continue to grow to meet the training demands of .NET developers looking to learn this new technology.

REST

A common architecture that has been used in many new social computing and Web 2.0 applications is called Representational State Transfer (REST). This architecture allows calls to data through a resource-based representation that can be called using the basic HTTP objects in the browser. When an application is built using the principles of REST, it is called a RESTful application. RESTful applications can mimic the same operations of CRUD methods. These CRUD methods are create, read, update, and delete, also the common operations for data retrieval and modification. Table 1-1 shows the HTML operations and the corresponding type of action that might be called in HTTP request.

Although the HTTP methods map very well to the CRUD operations, there is no hard or fast rule that states that a developer can only use those operations. In fact, many times, the POST method is used simply for any action that will have effects on the data that it is making a call to.

Table 1-1

HTTP Method	CRUD
PUT	Create
GET	Read
POST	Update
DELETE	Delete

The best way to recognize when a system has used REST as a way to make calls to the underlying data is to see if a resource-based call can be made, such as the following:

```
http://www.devcow.com/eventserver/usergrouops/
http://www.devcow.com/eventserver/usergroups/{group} (each group will have a URL)
```

The resulting XML that might be returned might look like the following:

```
<?xml version="1.0" encoding="UTF-8"?>
<usergroups_get_response xmlns="http://www.devcow.com/api/1.0/">
    <usergroup>SharePoint Users Group</usergroup>
    <usergroup>.NET Users Group</usergroup>
</usergroups_get_response>
```

This can make programming an application very easy from client code such as JavaScript. In fact, the code can return the result of the URL in any form desired. The returned data set could be sent back in the form of XML, JSON, .NET, or even HTML, all of which are popular mechanisms for passing data around the Internet. Because a web browser can display any HTML, developers could simply point their web browsers to a resource that displays the output in HTML and let the browser take care of displaying the output without any other programming.

SharePoint 2007 actually has a set of interfaces that are very similar to REST. In the documentation, they are called the *URL protocol*. This references the way they are called more than the operations that are described. These operations make use of a `dll` named `owssvr.dll` and specify the command that is called as one of the parameters that is passed in. These calls are made from external applications as well as the SharePoint web pages. One of the reasons that these URL protocol methods do not match the REST architecture is that they are all based on the GET requests and require that the command be passed as a parameter as stated above. When making a call to these methods, a similar pattern emerges that looks like the following code.

```
http://Server_Name/[sites/][Site_Name/]_vti_bin/owssvr.dll?Cmd=
   Method_name[&Parameter1=Value1&Parameter2=Value2 ... ]
```

In most cases, the return value is an XML string that represents CAML output. This CAML can be decoded to display the requested information on a page. In some cases, it can display either XML or

HTML. Using these method calls, a developer can access many aspects of SharePoint with simple calls to the URL protocol, but it is important to understand that not all actions can be performed this way. There are certainly cases where more complex programming that takes advantage of the SharePoint web services API is required.

Web Services

Web services are what is known as a standards-based way of retrieving data. Web services declare a set of method calls that can be called from another set of code using XML messages and the SOAP standard as the method of communication. Although it is possible to create RESTful web services, most of the web services today are based on remote procedure calls (RPC) web services. RPC web services use a different XML based standard to pass requests and data around the Internet. This RPC communication requires that each side of the communication agree to a contract that defines the available commands and the expected return data types. To define a contract for the two endpoints to communicate, web services use a language named *Web Services Description Language (WSDL)*. The WSDL file will contain information such as the endpoints, the data types, and the interfaces that will be used.

SharePoint 2007 provides many web services that can be used to work with the system either from remote machines or code that does not have direct access to the object model. One major difference between a non-SharePoint web service and a SharePoint web service is that the endpoint in a SharePoint web services is virtualized. Every call to SharePoint web service is in the form of the site location followed by the web service file, such as `http://<Site>/_vti_bin/Lists.asmx`. There are many SharePoint web services, and the full description of each web service is outside the scope of this book. Feel free to refer to other Wrox Press books such as chapter 5 of *Professional SharePoint 2007 Development* or the SharePoint documentation on MSDN for more information on the SharePoint web services API.

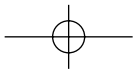
Software Services

Many social computing services today provide free software use. These types of software can range from blogs to social networking pages. The next generation of software will most likely have a service offering as well as a standalone offering. This might even include full applications such as Microsoft Office SharePoint Server 2007. The trend with software as a service is to have a free basic version and then charge for support, nonadvertising sites, and larger-scaling capabilities.

Microsoft Online Services already provides Office Live Meeting, Exchange Hosted Services, Exchange Online, SharePoint Online, and Office Communication Online. This provides a solution for companies that want leading-edge capabilities, but do not want the burden of hosting these services themselves.

Summary

This chapter has provided an overview of what social computing is and the types of applications that are created to achieve the benefits of social computing applications. The chapter explored each application's characteristics and demonstrated an implementation of social media on SharePoint with the beginnings of a YouTube-style site in only eight steps. The chapter closed with a brief explanation of the core technologies available to designers of social applications in the Web 2.0 world.



Key takeaways from this chapter include:

- While social computing has recently experienced a surge in popularity, history teaches that the social nature of computing has existed as long as computer networks have.
- Web 2.0 is a buzzword implying a user-focused software application that takes advantage of modern web technologies. Enterprise 2.0 is the adoption of the same user-focused and web technologies inside of the enterprise.
- Both Web 2.0 in general and social computing specifically offer numerous technical aspects and approaches to problem solving. There is no need to use every technology or social concept at once. Instead, pick the concepts and technologies hat bring value to the business.

The next chapter will discuss how to embark on a social computing project in the enterprise, including advice on assembling a project team, designing appropriate corporate governance policies, and strategies for building end-user adoption.